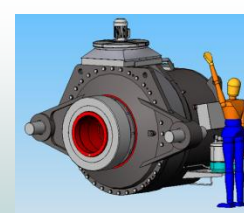


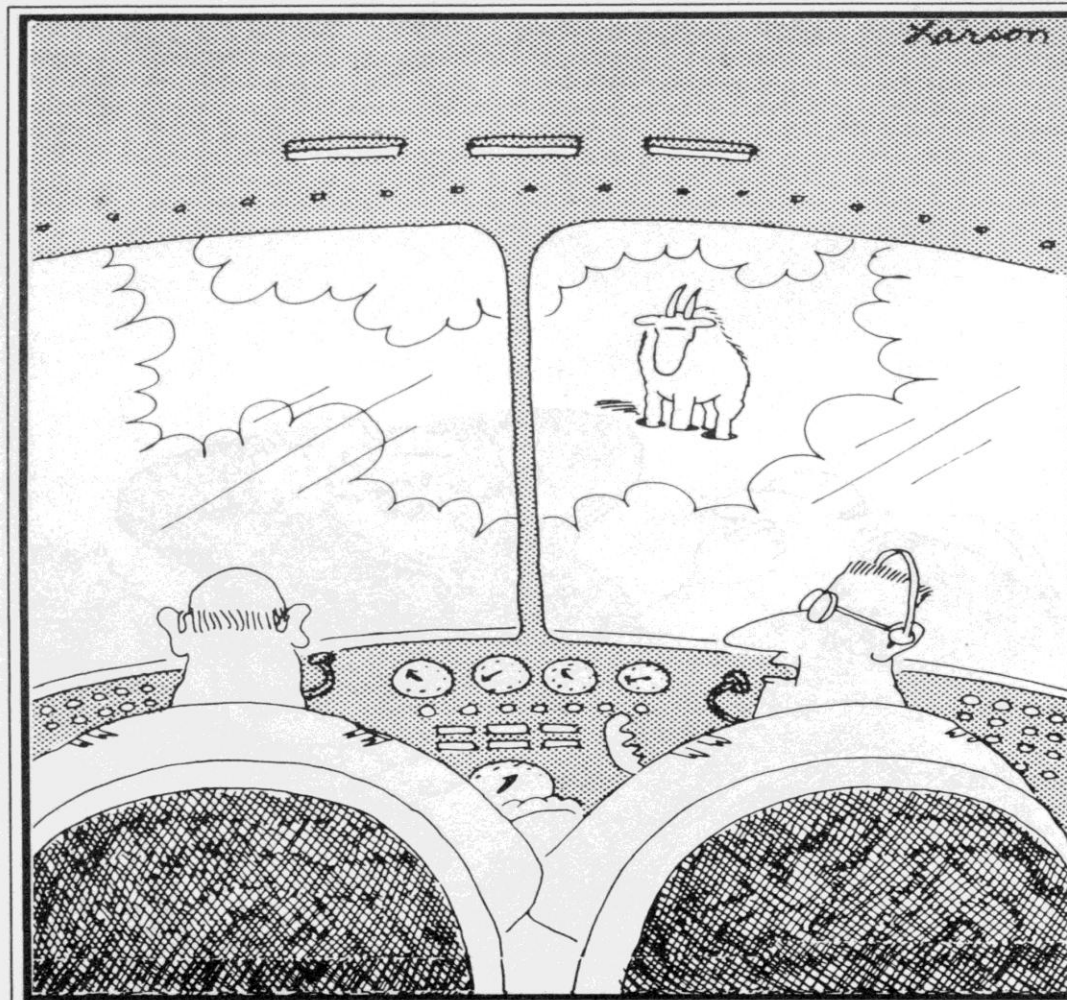
Opportunities *Green Energy Manufacturing*

WIndiana
July 22nd, 2009

Brevini Wind USA, Inc.
&
VAT-Group USA, Inc.



The state of U.S. Manufacturing?



"Say . . . What's a mountain goat doing way up here in a cloud bank?"

**Despite the economic downturn
Indiana continues to lead the
nation in manufacturing output
per capita. Manufacturing leads
employee compensation in *64 out
of 92* counties state wide.**

A map of Indiana showing its 92 counties. The counties are colored based on the number of Democratic House members they elected in 2018. The colors are: dark red for 0 members, yellow for 1 member, orange for 2 members, and blue for 3 members. Hamilton County is the only county colored blue (3 members). Several counties are colored yellow (1 member), including Benton, Carroll, Clinton, Boone, Hamilton, Howard, Grant, Madison, Delaware, Randolph, Henry, Wayne, Hancock, Marion, Morgan, Johnson, Shelby, Rush, Fayette, Union, Franklin, Dearborn, Ohio, Switzerland, Knox, Pike, Dubois, Crawford, Harrison, and Sullivan. The remaining counties are colored dark red (0 members).

- Source: IBRC, using Bureau of Economic Analysis data

Manufacturing in Indiana.



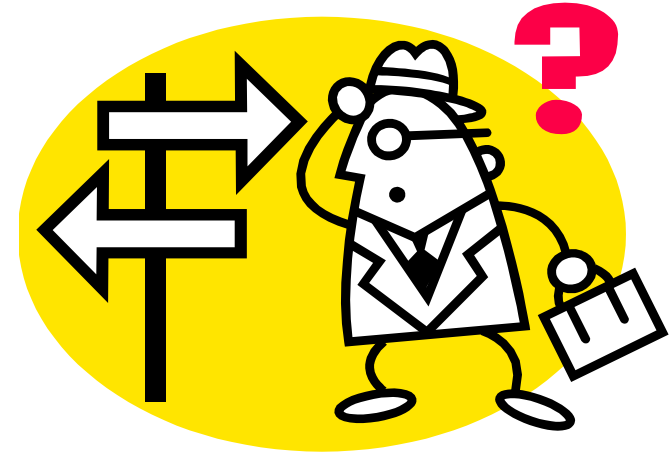
Manufacturing in Indiana?



Manufacturing in Indiana, what now?

INDIANA'S STRENGTH'S

- ❑ EE talent & expertise
- ❑ ME talent & expertise
- ❑ Skilled labor talent & expertise
- ❑ Hard part resources
- ❑ Manufacturing infrastructure
- ❑ Logistical infrastructure
- ❑ Geographical advantage



Manufacturing in Indiana, what now?



Indiana's strengths applied to the realities of the day suggest manufacturing opportunities in emerging products:

- ☐ Advanced EE components
- ☐ Distributed Power options
- ☐ Next generations batteries
- ☐ Alternative energy options

☐ **Green Energy Manufacturing**

Green Energy Manufacturing, part of our future?

Wind Energy Manufacturing, is it real?

- ❑ The U.S. Department of Energy (DOE) recently released a report projecting that wind power could provide 20% of U.S. electricity by 2030.
- ❑ Getting wind where it currently stands today (producing just 1% of U.S. annual electricity) required a \$25 billion investment.
- ❑ Consequently it will require roughly *\$500 billion* in wind energy investment to reach that 20% target... And that's in the U.S. alone.

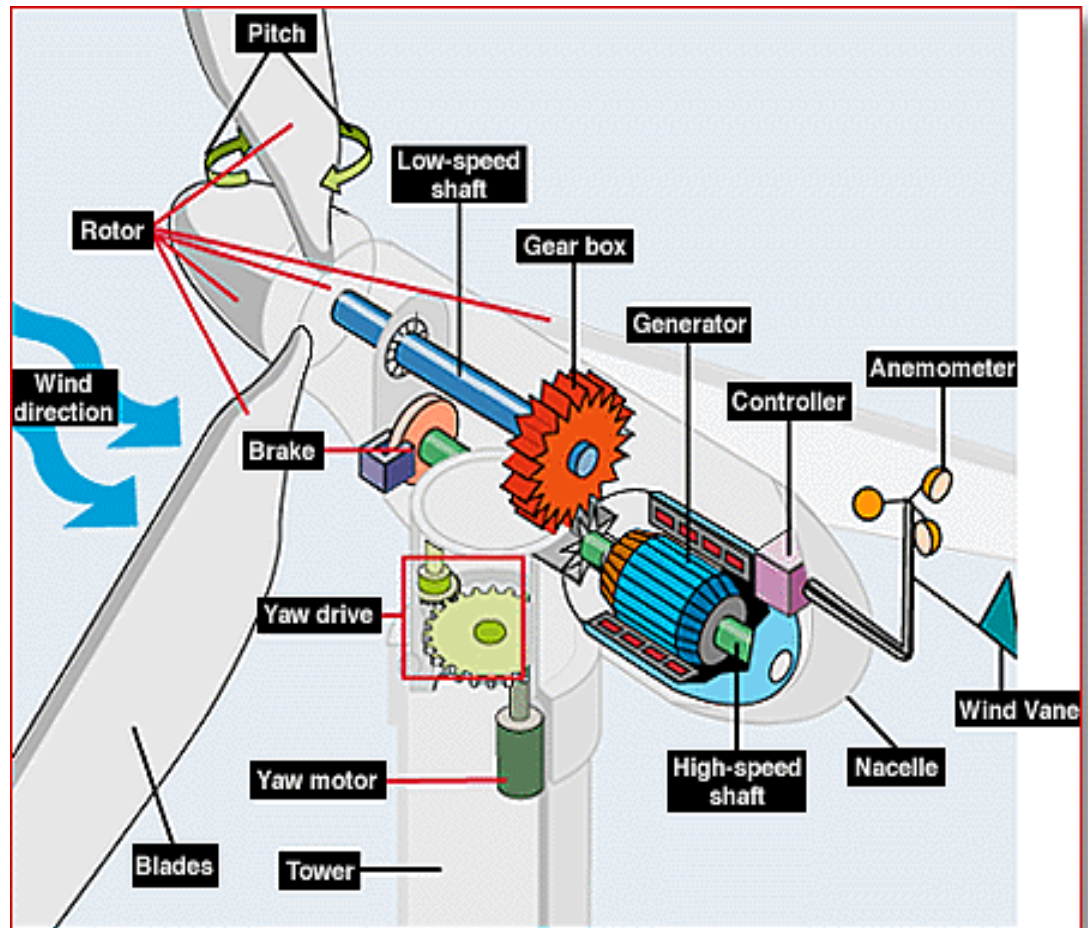


Green Energy Manufacturing, part of our future!

Wind Turbine Main Components:

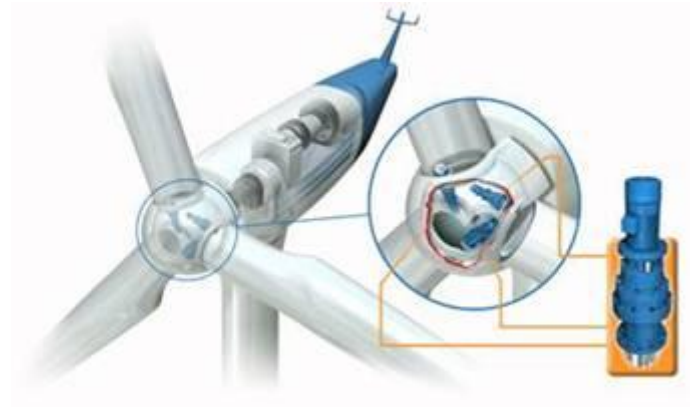
- ☐ Tower
- ☐ Blades
- ☐ Rotor & Hub
- ✓ Pitch & Yaw
- ✓ Main Drive
 - ✓ Bearings
 - ✓ Castings
 - ✓ Forgings
 - ✓ Steel
- ☐ Nacelle
- ☐ Generator
- ☐ Controls

Wind Energy Manufacturing



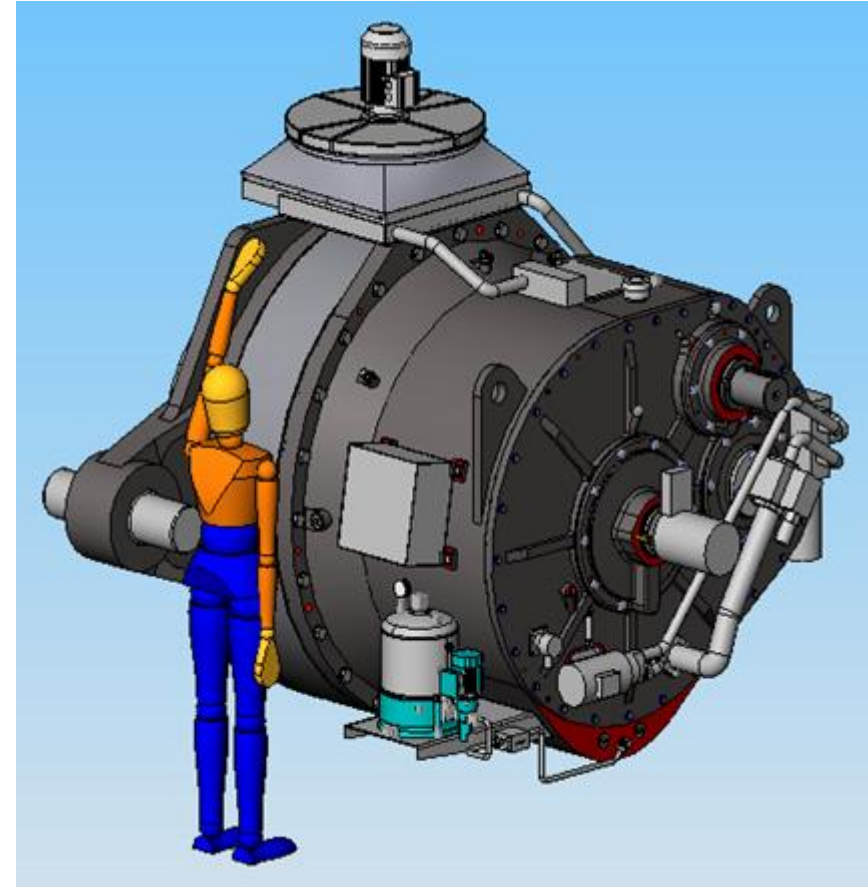
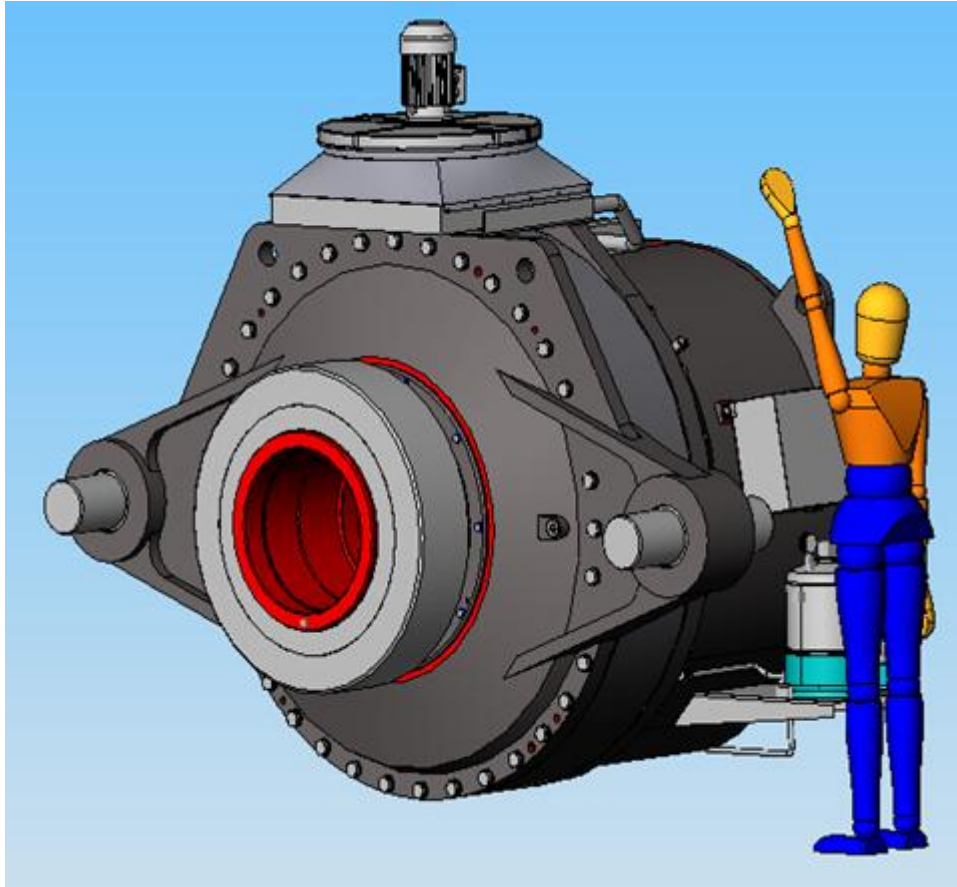
Wind Energy Manufacturing in Indiana

Currently, Brevini is the #2 producer of pitch and yaw drives worldwide!



Wind Energy Manufacturing in Indiana

Brevini Main Drives



Wind Energy Manufacturing in Indiana

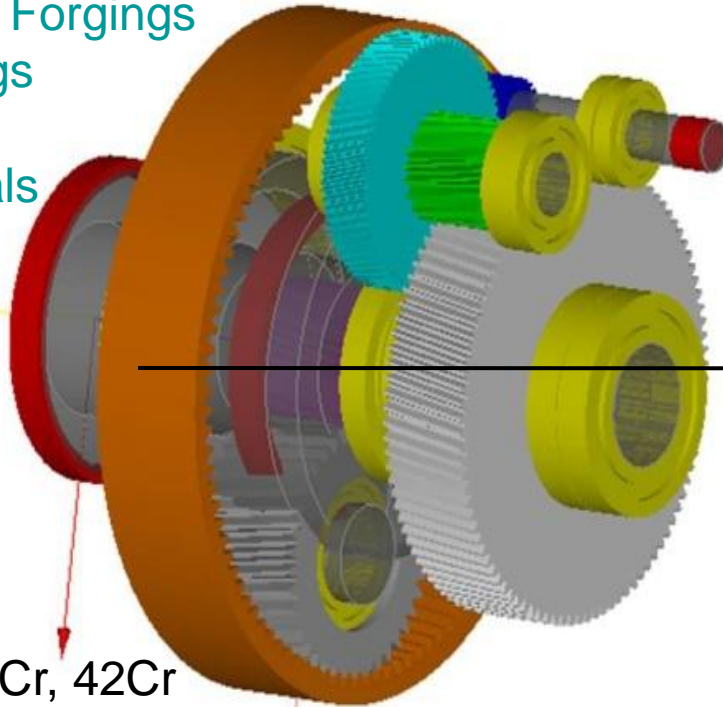
Components will include:

- ☐ Gray Iron Castings
- ☐ Iron & Steel Forgings
- ☐ Drop forgings
- ☐ Bar steel
- ☐ Rings & seals
- ☐ Bearings

Certify
(Din 3.1 B)

Steel 18Cr, 34Cr, 42Cr

3 M Solar Ring



Brevini Wind Supplier Conference



Thursday July 23rd 1:00PM EST
Horizon Convention Center
Downtown Muncie IN

Supplier Procurement Form

Supplier Category, check each box that applies

- ☐ Small diameter bar steel 48mm to 100mm 18Cr, 34Cr, 42Cr certify (Din 3.1 B)
- ☐ Large diameter bar steel 100mm to 763mm 18Cr, 34Cr, 42Cr certify (Din 3.1 B)
- ☐ Bearings
- ☐ Seals
- ☐ Gray Iron Castings
- ☐ Iron forgings
- ☐ Steel forgings
- ☐ Rolled Rings diameter 700 mm to 2200 mm
- ☐ Metrology services, testing instruments and materials
- ☐ Case Hardening, Hardening and tempering, Nitriding
- ☐ Painting materials
- ☐ Tooling supply
- ☐ Lubricants
- ☐ Other

Please submit to the Brevini Portion of the Work One website located at www.Work-One.org click on the **Brevini logo** and submit. You may also complete a hard copy of the form and submit at the supplier conference on **Thursday July 23rd** beginning at **1:00 PM EST** at the **Horizon Convention Center in Downtown Muncie IN.**

VAT-Group Supplier Conference



Supplier Procurement Form

Supplier Category, check each box that applies

- ☐ Pipes and sheets in different qualities
- ☐ Bearings
- ☐ Seals
- ☐ Iron forgings
- ☐ Steel forgings
- ☐ Rings
- ☐ Material testing
- ☐ Machine supply
- ☐ Tooling supply
- ☐ Steel plates
- ☐ Electrical supply, wiring harness
- ☐ LED Lightening options
- ☐ Battery options
- ☐ Solar Panel options
- ☐ Other

Please submit to the VAT-Group Portion of the Work One website located at www.Work-One.org click on the **VAT-Group logo** and submit. You may also complete a hard copy of the form and submit at the supplier conference on **Thursday July 23rd** beginning at **3:00 PM EST** at the **Horizon Convention Center in Downtown Muncie IN.**

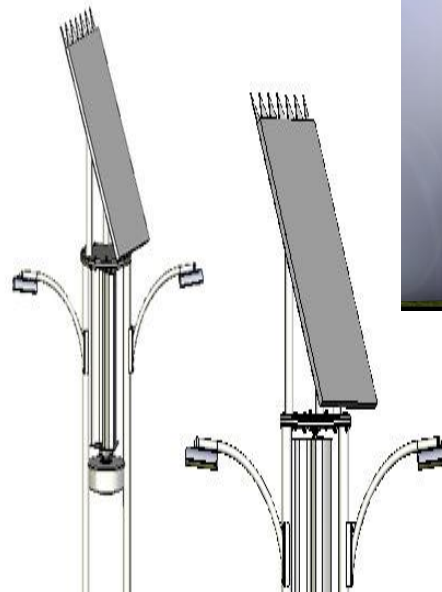
Thursday July 23rd 3:00PM EST
Horizon Convention Center
Downtown Muncie IN

Green Energy Manufacturing in Indiana



Technical Specification Gemini

- ❑ Dimensions without basement (HxWxD in mm): 7500 x 2500 x 800
- ❑ Dimensions basement (HxWxD in mm): 800 x 1800 x 1800
- ❑ Height of Light Spot of the "arms": 5900 mm
- ❑ Illumination radius of the „arms“: 2 x 25m
- ❑ Intensity of illumination: 1Lx at 25m
- ❑ Height of Light Spot (Middle Light): 3500 mm
- ❑ Illumination radius : 7m
- ❑ Intensity of illumination: 1 Lx at 7m
- ❑ Expected Life: 15 years
- ❑ Weight: 700kg
- ❑ Storage capacity: 2 x 230Ah
- ❑ Illuminant: LED
- ❑ Rotor: Savonius
- ❑ Power of the rotor: 20W at 6m/s
- ❑ Power of the photovoltaic module: 225 Wp
- ❑ Temperature range: - 20°C to +40°C
- ❑ Sensor technology: Twilight Switch

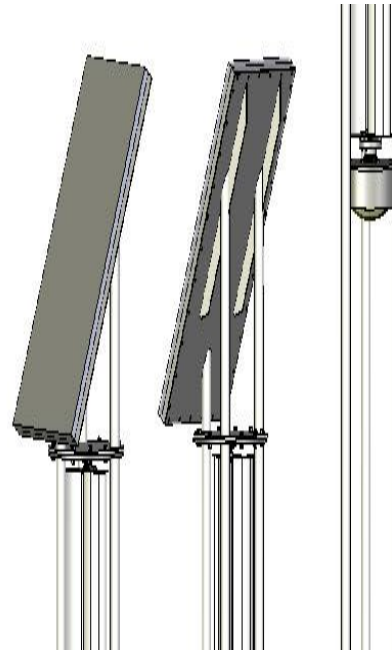


Green Energy Manufacturing in Indiana



Technical Specification Leo

- ☐ Dimensions without basement (HxWxD in mm): 6540 x 800 x 800
- ☐ Dimensions basement (HxWxD in mm): 800 x 1800 x 1800
- ☐ Height of Light Spot (Middle Light): 3500mm
- ☐ Illumination radius : 7m
- ☐ Intensity of illumination: 1 Lx at 7m
- ☐ Expected Life: 15 years
- ☐ Weight: 800kg
- ☐ Storage capacity: 2 x 130Ah
- ☐ Illuminant: LED
- ☐ Rotor: Savonius
- ☐ Power of the rotor: 20W
- ☐ Power of the photovoltaic module: 1 85 Wp
- ☐ Temperature range: -20°C to +40°C
- ☐ Sensor technology: Twilight Switch

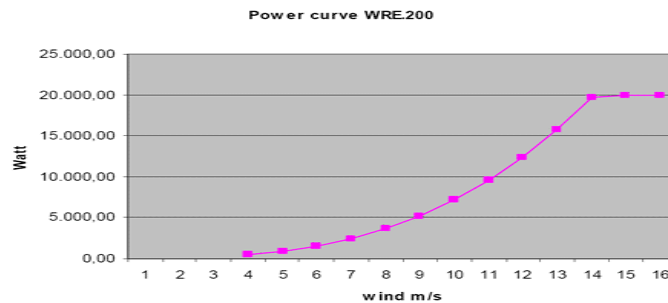


Green Energy Manufacturing in Indiana



Technical Specification - 20 kW Vertical Vane

- ☐ circa 7 kW
- ☐ **Leistung bei 14m/s**
- ☐ circa 20 kW
- ☐ **Anlauf** 3 m/s
- ☐ **Nominal** 14 m/s
- ☐ **Gewicht** ~2600 kg
- ☐ **Abmessungen** 8,5 m x 4,3 m
- ☐ **Oberfläche** 36,5 m²
- ☐ **Bremssystem** nicht benötigt
- ☐ **Generator** PMG 20 kW
- ☐ **Nominalspannung** ~270 Vac
- ☐ **Pole** 80 ‘



VAT-Group Supplier Conference



Supplier Procurement Form

Supplier Category, check each box that applies

- ☐ Pipes and sheets in different qualities
- ☐ Bearings
- ☐ Seals
- ☐ Iron forgings
- ☐ Steel forgings
- ☐ Rings
- ☐ Material testing
- ☐ Machine supply
- ☐ Tooling supply
- ☐ Steel plates
- ☐ Electrical supply, wiring harness
- ☐ LED Lightening options
- ☐ Battery options
- ☐ Solar Panel options
- ☐ Other

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Thursday July 23rd 3:00PM EST
Horizon Convention Center
Downtown Muncie IN

Brevini Wind Supplier Conference



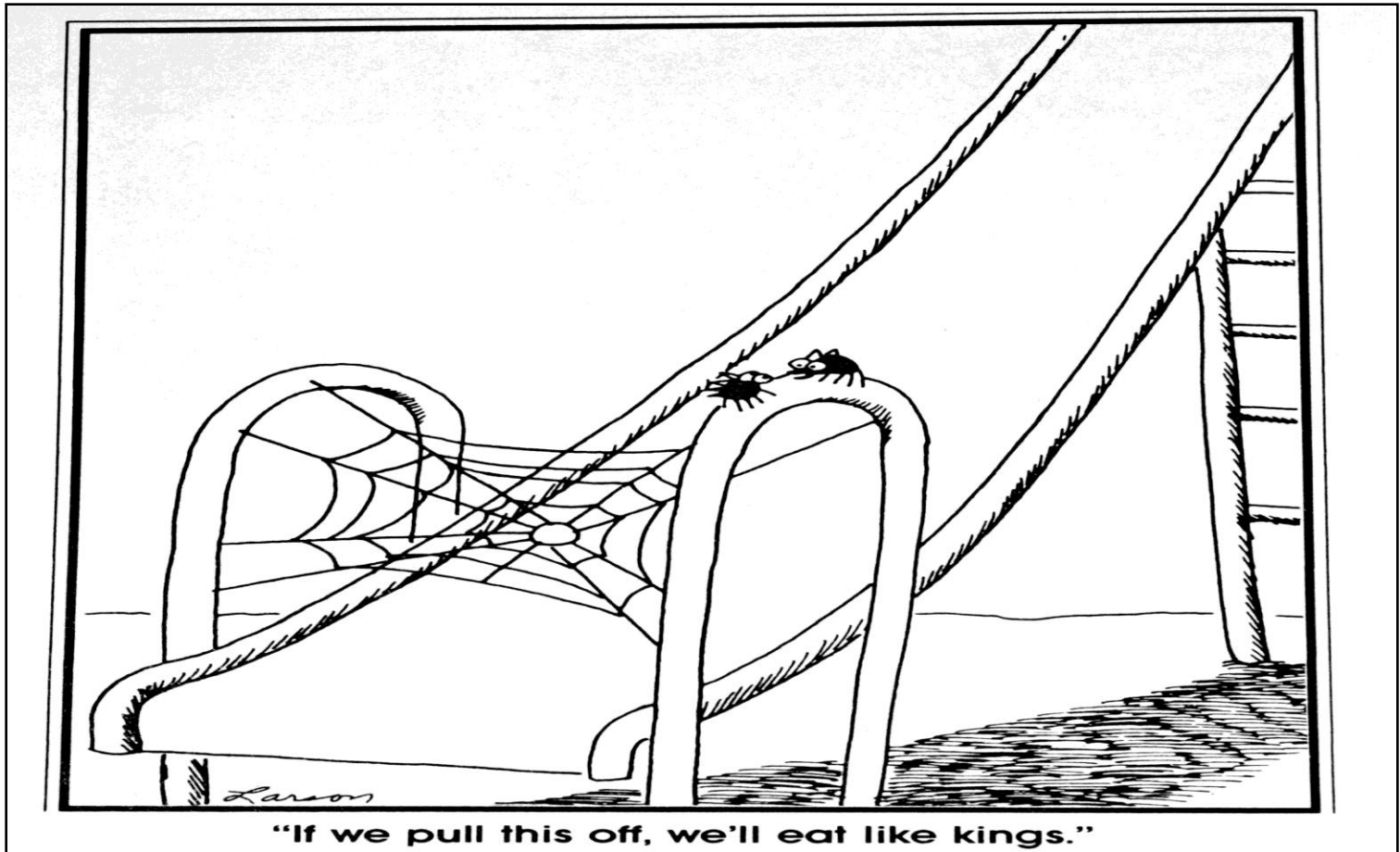
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Horizon Convention Center
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Supplier Procurement Form

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- ☐ Painting materials
- ☐ Tooling supply
- ☐ Lubricants
- ☐ Other

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Green Energy Manufacturing in Indiana!